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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

RUSH, ERIC

ART UNIT

PAPER NUMBER

2624

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/730,944	Applicant(s) KAKU, TOSHIHIKO	
	Examiner ERIC RUSH	Art Unit 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 January 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

This action is responsive to the amendment and remarks received on 31 January 2008. Claims 1 - 24 are currently pending.

Claim Rejections - 35 USC § 103

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 1 - 2, 8 - 9, and 20 - 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fuersich et al. U.S. Publication No. 2003/00440070 A1 and further in view of Okano et al. U.S. Patent No. 6,404,903.

- With regards to claim 1, Fuersich et al. teach a face recognition method for recognizing face portions in an image based on image data of the image, comprising: a detection step of detecting, in the image, eye portions which have undergone a predetermined color change, based on the image data; (Fuersich et al., Page 5 Paragraph 0047 and Paragraph 0050) and a recognition step of recognizing face portions in the image based on the eye portions detected in the detection step. (Fuersich et al., Figs. 1A, 1B, & 1C, Page 6 Paragraph 0054) Fuersich et al. fail to teach an identification step of identifying an individual person being photographed based on the face portions recognized in the image. Okano et al. teach an identification step of identifying an individual person being photographed based on the face portions recognized in the image. (Okano et al., Abstract, Fig. 1, Fig. 2, Column 9 Lines 30-44) It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Fuersich et al. to include the teachings of Okano et al. This modification would have been prompted because the use of face portions, particularly eye portions or a face, for individual recognition is notoriously well known. Some advantages of individual recognition/identification may be automatic annotation images and/or security based applications.

Art Unit: 2624

- With regards to claim 2, Fuerisch et al. in view of Okano et al. teach the face recognition method according to claim 1. Fuerisch et al. teach wherein the detection step detects red-eye portions in the image. (Fuersich et al., Page 5 Paragraph 0047 and 0050, Page 6 Paragraph 0052)
- With regards to claim 8, Fuerisch et al. in view of Okano et al. teach the face recognition method according to claim 1. Fuerisch et al. teach wherein the detection step of detecting eye portions which have undergone a predetermined color change includes comparing a pixel value of the image data with a reference pixel value which corresponds to the predetermined color change. (Fuersich et al., Page 5 Paragraphs 0047 and 0050, Page 6 Paragraph 0052)
- With regards to claim 9, Fuerisch et al. in view of Okano et al. teach the face recognition method according to claim 8. Fuerisch et al. teach wherein the reference pixel value is a red reference value or a gold reference value. (Fuersich et al., Page 5 Paragraphs 0047 and 0050, Page 6 Paragraph 0052)
- With regards to claim 20, Fuerisch et al. in view of Okano et al. teach the face recognition method according to claim 1. Fuerisch et al. fail to teach

wherein the identification step is performed only if the eye portions which have undergone the predetermined color change are detected. Okano et al. implicitly teach wherein the identification step is performed only if the eye portions which have undergone the predetermined color change are detected. (Okano et al., Column 11 Lines 18 – 25, if there are no eye portions in the input image then comparison cannot take place)

- With regards to claim 21, Fuerisch et al. in view of Okano et al. teach the face recognition method according to claim 20. Fuerisch et al. fail to teach wherein the identification step includes: searching for face images stored in a storage section that match the recognized face portions; and acquiring identification information stored in the storage section which is associated with a matched face image. Okano et al. teach wherein the identification step includes: searching for face images stored in a storage section that match the recognized face portions; (Okano et al., Column 11 Lines 1 - 61) and acquiring identification information stored in the storage section which is associated with a matched face image. (Okano et al., Column 11 Lines 1 - 61)
- With regards to claim 22, Fuerisch et al. in view of Okano et al. teach the face recognition method according to claim 1. Fuerisch et al. fail to teach wherein the identification step is performed based on a result of the

detection step, in which the eye portions which have undergone the predetermined color change are detected. Okano et al. implicitly teach wherein the identification step is performed based on a result of the detection step, (Okano et al., Column 11 Lines 18 – 25, if there are no eye portions in the input image then comparison cannot take place) in which the eye portions which have undergone the predetermined color change are detected. (Okano et al., Column 11 Lines 18 – 25, if there are no eye portions detected in the input image using the method of Fuerisch et al. then comparison cannot take place)

- With regards to claim 23, Fuerisch et al. in view of Okano et al. teach the face recognition method according to claim 22. Fuerisch et al. fail to teach wherein the identification step is performed only if the predetermined color change is detected. Okano et al. implicitly teach wherein the identification step is performed only if the predetermined color change is detected. (Okano et al., Column 11 Lines 18 – 25, if there are no eye portions detected in the input image using the method of Fuerisch et al. then comparison cannot take place)
- With regards to claim 24, Fuerisch et al. in view of Okano et al. teach the face recognition method according to claim 1. Fuerisch et al. fail to teach wherein the individual person is identified according to unique

identification information which corresponds to the individual person.

Okano et al. teach wherein the individual person is identified according to unique identification information which corresponds to the individual person. (Okano et al., Column 9 Line 66 – Column 10 Line 26)

3. Claims 3-7, 11-12, 14-15, and 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fuersich et al. U.S. Publication No. 2003/0044070 A1 in view of Chen et al. U.S. Publication No. 2002/0081032 A1.

- With regards to claim 3, Fuersich et al. teach a method that recognizes face portions in an image based on image data of the image, comprising: a detection section which detects, in the image, eyes which have undergone a predetermined color change, based on the image data; (Fuersich et al., Page 5 Paragraph 0047 and Paragraph 0050) and a recognition section which recognizes face portions in the image based on the eyes detected by the detection section. (Fuersich et al., Figs. 1A, 1B, & 1C, Page 6 Paragraph 0054) Fuersich et al. fail to teach a face recognition apparatus, which recognizes face portions in an image and an individual recognition section which identifies an individual person being photographed based on the face portions recognized in the image. Chen et al. teach a face recognition apparatus, which recognizes face portions in an image. (Chen et al. Fig. 1, Page 3 Paragraph 0091) Chen et al. fail to teach an individual recognition section which identifies an individual person being photographed based on the face portions recognized in the image. Okano et al. teach an individual recognition section which identifies an individual person being photographed based on the face portions recognized in the image. (Okano et al., Abstract, Fig. 1, Fig. 2, Column 9 Lines 30-44) It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Fuersich et al. with the teachings of Chen et al. This modification would have been prompted in order to employ the method as disclosed by Fuersich et al. in to real

world practice effectively and efficiently. It would have been obvious to modify the combined teachings of Fuersich et al. in view of Chen et al. with the teachings of Okano et al. This modification would have been prompted because the use of face portions, particularly eye portions or a face, for individual recognition is notoriously well known. Some advantages of individual recognition/identification may be automatic annotation images and/or security based applications.

- With regards to claims 4 and 5, Fuerisch et al. teach a face extraction method for extracting face portions from an image and generating facial images based on image data of the image, comprising: a detection step of detecting, in the image, eye portions which have undergone a predetermined color change, based on the image data; (Fuersich et al., Page 5 Paragraph 0047 and Paragraph 0050) a recognition step of recognizing face portions in the photographic image based on the eye portions detected in the detection step; (Fuersich et al., Figs. 1A, 1B, & 1C, Page 6 Paragraph 0054) a correction step of correcting the color change in the eye portions detected in the detection step. (Fuersich et al., Figs. 1A, 1B, & 1C, Page 6 Paragraph 0054) Fuerisch et al. fail to teach a face image generating step of generating facial images by extracting, from the image, the face portions which have been recognized in the recognition step and whose color change has been corrected in the correction step; and an identification step of identifying an individual person being photographed based on the generated facial images. Chen et al. teach a face image generating step of generating facial images by extracting, from the image, the face portions which have been recognized in the recognition step and whose color change has been corrected in the correction step. (Chen et al. Page 4 Paragraph 0099 Lines 5 – 10) Chen et al. fail to teach an identification step of identifying an individual person being photographed based on the generated facial images. Okano et al.

teach an identification step of identifying an individual person being photographed based on the generated facial images. (Okano et al., Abstract, Fig. 1, Fig. 2, Column 9 Lines 30-44) It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Fuesich et al. with the teachings of Chen et al. This modification would have been prompted in order to create mugshot type images which may be used in a variety of applications from biometric identification to saving storage space in memory. It would have been obvious to modify the combined teachings of Fuersich et al. in view of Chen et al. with the teachings of Okano et al. This modification would have been prompted because the use of face portions, particularly eye portions or a face, for individual recognition is notoriously well known. Some advantages of individual recognition/identification may be automatic annotation images and/or security based applications.

- With regards to claim 6, Fuersich et al. teach an image pickup apparatus which photographs a subject and generates photographic image data of a photographic image, comprising: a detection section that detects, in the photographic image, eye portions which have undergone a predetermined color change, based on the image data; (Fuersich et al., Page 5 Paragraph 0047 and Paragraph 0050) a recognition section that recognizes face portions in the photographic image based on the eye portions detected by the detection section; (Fuersich et al., Figs. 1A, 1B, & 1C, Page 6 Paragraph 0054) a correction section that corrects the color change in the eye portions detected by the detection section; (Fuersich et al., Figs. 1A, 1B, & 1C, Page 6 Paragraph 0054) Fuersich et al. fail to teach an image pickup apparatus and a face image generating section that generates facial images by extracting, from the photographic image, the face portions which have been recognized by the recognition section and whose color change has been corrected by the correction section; an individual recognition section which identifies an individual person being photographed based on the generated facial images. Chen et al. teach an image pickup apparatus (Chen et al., Column 3 Lines 54 – 67) and a face image generating step of generating facial images by extracting, from the image, the face portions which have been recognized in the recognition step and whose color change has been corrected in the correction step. (Chen et al. Page 4 Paragraph 0099 Lines 5 – 10) Chen et al. fail to teach

an individual recognition section which identifies an individual person being photographed based on the generated facial images. Okano et al. teach an individual recognition section which identifies an individual person being photographed based on the generated facial images. (Okano et al, Abstract, Fig. 1, Fig. 2, Column 9 Lines 30-44) It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Fuesich et al. with the teachings of Chen et al. This modification would have been prompted in order to create mugshot type images, which may be used in a variety of applications from biometric identification to saving storage space in memory. Also, Chen et al. disclose the image pickup apparatus, which is suggested by Fuersich et al. (Page 4 Paragraph 0040) that would have made it obvious to one of ordinary skill in the art at the time of the invention to include in their method in order to add functionality to the method effectively and efficiently in real world practice. It would have been obvious to modify the combined teachings of Fuersich et al. in view of Chen et al. with the teachings of Okano et al. This modification would have been prompted because the use of face portions, particularly eye portions or a face, for individual recognition is notoriously well known. Some advantages of individual recognition/identification may be automatic annotation images and/or security based applications.

- With regards to claim 7, Fuersich et al. in view of Chen et al. teach the image pickup apparatus according to claim 6. Fuersich et al. teach wherein the detection section detects red-eye portions in the image and the correction section corrects the red-eye portions detected by the detection section. (Fuersich et al., Page 5 Paragraph 0047 and Paragraph 0050) and the correction section corrects the red-eye portions detected by the detection section. (Fuersich et al., Figs. 1A, 1B, & 1C, Page 6 Paragraph 0054)
- With regards to claim 11, Fuersich et al. in view of Chen et al. teach the face recognition apparatus according to claim 3. Fuersich et al. teach wherein the detection section which detects eyes which have undergone a predetermined color change, compares a pixel value of the image data with a reference pixel value which corresponds to the predetermined color change. (Fuersich et al., Page 5 Paragraph 0047 and Paragraph 0050)
- With regards to claim 12, Fuersich et al. in view of Chen et al. teach the face recognition apparatus according to claim 11. Fuersich et al. teach wherein the reference pixel value is a red reference value or a gold reference value. (Fuersich et al., Page 5 Paragraph 0047 and Paragraph 0050)

- With regards to claim 14, Fuersich et al. in view of Chen et al. teach the face extraction method according to claim 4. Fuersich et al. teach wherein the detection step of detecting eye portions which have undergone a predetermined color change includes comparing a pixel value of the image data with a reference pixel value which corresponds to the predetermined color change. (Fuersich et al., Page 5 Paragraph 0047 and Paragraph 0050)
- With regards to claim 15, Fuersich et al. in view of Chen et al. teach the face extraction method according to claim 14. Fuersich et al. teach wherein the reference pixel value is a red reference value or a gold reference value. (Fuersich et al., Page 5 Paragraph 0047 and Paragraph 0050)
- With regards to claim 17, Fuersich et al. in view of Chen et al. teach the face recognition apparatus according to claim 6. Fuersich et al. teach wherein the detection section that detects eyes which have undergone a predetermined color change, compares a pixel value of the image data with a reference pixel value which corresponds to the predetermined color change. (Fuersich et al., Page 5 Paragraph 0047 and Paragraph 0050)

- With regards to claim 18, Fuersich et al. in view of Chen et al. teach the face recognition apparatus according to claim 17. Fuersich et al. teach wherein the reference pixel value is a red reference value or a gold reference value. (Fuersich et al., Page 5 Paragraph 0047 and Paragraph 0050)

4. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fuersich et al. U.S. Publication No. 2003/0044070 in view of Okano et al. U.S. Patent No. 6,404,903 as applied to claim 1 above, and further in view of Nesterov et al. U.S. Patent No. 6,980,691.

- With regards to claim 10, Fuersich et al. teach in view of Okano et al. the face recognition method according to claim 1. Fuersich et al. fail to teach wherein the predetermined color change is a gold-eye occurrence. Nesterov et al. teach wherein the predetermined color change is a gold-eye occurrence. (Nesterov et al., Column 1 Lines 15 – 28) It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined teachings of Fuersich et al. in view of Okano et al. to include the teachings of Nesterov et al. This modification would have been prompted because Nesterov et al. state that gold-eye occurrences can occur and create un-welcomed image qualities similar to red-eye. Therefore modifying Fuersich et al. to not only detect and correct for red-

eye but gold-eye along with any other color that may be harmful to the quality of picture would have been obvious to increase the capabilities and range of photograph enhancement that Fuersich et al. could obtain.

5. Claims 13, 16, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fuersich et al. U.S. Publication No. 2003/0044070 A1 in view of Chen et al. U.S. Publication No. 2002/0081032 A1 further in view of Okano et al. U.S. Patent No. 6,404,903 as applied to claims 3, 4, and 6 above, and further in view of Nesterov et al. U.S. Patent No. 6,980,691.

- With regards to claim 13, Fuerisch et al. in view of Chen et al. further in view of Okano et al. teach the face recognition apparatus according to claim 3. Fuerisch et al. fail to teach wherein the predetermined color change is a gold-eye occurrence. Nesterov et al. teach wherein the predetermined color change is a gold-eye occurrence. (Nesterov et al., Column 1 Lines 15 – 28) It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined teachings of Fuerisch et al. in view of Chen et al. further in view of Okano et al. to include the teachings of Nesterov et al. This modification would have been prompted because Nesterov et al. state that gold-eye occurrences can occur and create un-welcomed image qualities similar to red-eye. Therefore modifying Fuerisch et al. to not only detect and correct for red-eye but gold-eye along with any other color that may be harmful to the quality of picture would have been obvious to increase the capabilities and range of photograph enhancement that Fuerisch et al. could obtain.

- With regards to claim 16, Fuerisch et al. in view of Chen et al. further in view of Okano et al. teach the face extraction method according to claim 4. Fuersich et al. fail to teach wherein the predetermined color change is a gold-eye occurrence. Nesterov et al. teach wherein the predetermined color change is a gold-eye occurrence. (Nesterov et al., Column 1 Lines 15 – 28) It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined teachings of Fuerisch et al. in view of Chen et al. further in view of Okano et al. to include the teachings of Nesetrov et al. This modification would have been prompted because Nesterov et al. state that gold-eye occurrences can occur and create un-welcomed image qualities similar to red-eye. Therefore modifying Fuersich et al. to not only detect and correct for red-eye but gold-eye along with any other color that may be harmful to the quality of picture would have been obvious to increase the capabilities and range of photograph enhancement that Fuersich et al. could obtain.

- With regards to claim 19, Fuersich et al. in view of Chen et al. further in view of Okano et al. teach the face recognition apparatus according to claim 6. Fuersich et al. fail to teach wherein the predetermined color change is a gold-eye occurrence. Nesterov et al. teach wherein the predetermined color change is a gold-eye occurrence. (Nesterov et al., Column 1 Lines 15 – 28) It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined teachings of Fuersich et al. in view of Chen et al. further in view of Okano et al. to include the teachings of Nesterov et al. This modification would have been prompted because Nesterov et al. state that gold-eye occurrences can occur and create un-welcomed image qualities similar to red-eye. Therefore modifying Fuersich et al. to not only detect and correct for red-eye but gold-eye along with any other color that may be harmful to the quality of picture would have been obvious to increase the capabilities and range of photograph enhancement that Fuersich et al. could obtain.

Response to Arguments

6. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric Rush whose telephone number is (571) 270-3017. The examiner can normally be reached on 7:30AM - 5:00PM (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Samir Ahmed can be reached on (571) 272-7413. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ER

/Samir A. Ahmed/
Supervisory Patent Examiner, Art Unit 2624